

**Identity of the *Anagyrus* that Parasitizes the Pineapple
Mealybug (Hymenoptera: Chalcidoidea: Encyrtidae)**

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In 1936, I received from D. T. Fullaway three specimens of an *Anagyrus* which he had reared from the pineapple mealybug, *Pseudococcus brevipes* (Ckll.) collected in Brazil. I identified the parasite as probably *Anagyrus coccidivorus* Dozier, and under this name its successful introduction into Hawaii and attempts to introduce it into Puerto Rico have been recorded in the literature.

Anagyrus coccidivorus Dozier (Proc. Ent. Soc. Wash., 34:8, 1932) was described from Haiti as a parasite of *Ferrisia virgatus* (Ckll.). Biological studies by D. W. Clancy and H. N. Pollard (1947) indicate that the *Anagyrus* from *P. brevipes* will not reproduce upon *F. virgatus* and, hence, that it is probably not *A. coccidivorus*. A recomparison of specimens of the pineapple mealybug parasite with the type of *coccidivorus* shows certain slight differences which were not considered significant at the time of the first comparison, but which now appear to be constant for a long series of specimens and to confirm the conviction that this parasite is not *coccidivorus*. Since it does not appear to agree completely with any known species, it is herewith described as new.

***Anagyrus ananatis*, new species.**

Anagyrus sp. Compere, Hawaii. Ent. Soc. Proc., 9:171, 1936;
Carter, idem: 366, 1937.

Anagyrus coccidivorus Dozier (Misidentification of). Carter, Jour. Econ. Ent., 30:370, 1937; Hawaii. Ent. Soc., Proc. 10:3, 1938; 12:489, 1946.—Schmidt, Hawaii. Ent. Soc., Proc. 10:194, 1939.—Plank, Puerto Rico Agr. Expt. Sta. Rpt., for 1937, p. 98, 1938; for 1938, p. 107, 1939.—Bartlett, Puerto Rico Univ. Jour. Agr., 23:70, 1939.—Swezey *et al.*, Hawaii. Ent. Soc., Proc. 10:352, 1939.—Anonymous, Puerto Rico Agr. Expt. Sta. Rpt. for 1939, p. 109, 1940; for 1940, p. 69, 1942.—Clancy and Pollard, Jour. Econ. Ent. 40:579, 1947.

Belongs to the group of species having the entire flagellum, with the exception of the first funicular segment, white. Many species of the genus fall in this group, but in the majority of these the entire first funicular segment is black, whereas in this new species only the basal half or less of the first segment is black. This character,

together with the absence of any pale longitudinal streak on the inner side of the scape, will distinguish it from *coccidiivorus* Dozier, with which species it otherwise agrees very closely.

Female.—Length 1.8 mm. General color orange-yellow more or less strongly diluted with blackish. Fronto-vertex and face for the most part bright orange; posterior margins of temples and cheeks black or blackish; occiput mostly black, but with a marginal border above and at sides slightly paler yellowish than the frons; mandibles dark reddish apically, the mouthparts otherwise pale yellow. Antennal scape dull black, except for a small round spot at extreme base and a broad transverse apical band of white; pedicel black at base, the apical half white; first funicular segment black basally with the apical half or two-thirds white; remainder of funicle and all of the club white; eyes grayish. Dorsum of thorax varying from bright orange with only a slight undertone of blackish, to very dark reddish brown or nearly black, the dorsal aspect of pronotum usually concolorous with mesoscutum, but occasionally somewhat more pallid; scutellum with a blackish median streak extending approximately half its length from its base; tegulae whitish basally, brownish apically, in dark specimens mostly dark brown; prepectus, metanotal sutures and middle of propodeum more or less whitish; sides of prothorax, mesopleura, metapleura and all sterna pale orange in the type, ranging to dark or dirty orange in other specimens; legs including coxae whitish, usually stained with fuscous along the dorsal and ventral margins of femora and tibiae; propodeum pale medially, black laterally; abdomen black or dark brown above, the gaster sometimes more or less orange beneath. Wings subhyaline, the venation fuscous.

Fronto-vertex about one and one-half times as long as its narrowest width, opaque; ocelli in a nearly equilateral triangle, the lateral ocelli very slightly farther from each other than from anterior ocellus; ocell-ocular line about equal to diameter of an ocellus and about equal also to the distance from ocellus to occipital margin. Mandibles bidentate, the upper tooth rounded at apex, the inner tooth much smaller, shorter and sharp. Antenna not quite so long as the body; scape not reaching level of anterior ocellus, expanded below, about twice as long as broad; pedicel about three times as long as broad at apex; first funicular segment usually a little longer than pedicel, never shorter; funicular segments beyond the first successively shortening slightly, the sixth about twice as long as thick; club distinctly 3-segmented, very slightly thicker than funicle and a little longer than two preceding segments. Eyes with short pile. Mesoscutum, axillae, and scutellum rather densely clothed with short silvery hairs, the scutellum also with three to four pairs of black bristles, the two pairs nearest apex long and subequal, the third pair from apex usually considerably shorter, and the fourth pair when present quite short and inconspicuous. Propodeum short with fine granular sculpture and clothed with short silvery hairs laterally. Abdomen about as long as head and thorax, acute at apex, finely sculptured, and clothed with short whitish hairs; ovipositor not exerted. Spur of middle tibia equal to basal segment of tarsus. Forewing extending a little beyond apex of abdomen; uniformly and rather densely ciliated, except for the hairless streak which is broadly interrupted behind the middle; stigmal vein twice as long as marginal, postmarginal very short, much shorter than stigmal.

Male.—Length 1.0 mm. Head, thorax and abdomen dull black; prepectus white; sides of prothorax and broad band along anterior margin of mesopleura orange; tegulae white basally, blackish apically; legs including front coxae white with some fuscous stains; hind coxae black and middle pair blackish. Antennal scape white at base and apex, black medially; pedicel black, usually paler at apex; flagellum dirty whitish, except first segment which is blackish basally. Wings hyaline, venation fuscous.

Scape short, expanded beneath, about twice as long as broad; pedicel about as broad as long; flagellum of a uniform thickness, clothed with coarse blackish hairs, its first segment approximately five times as long as thick and one and a half times as long as second segment, following segments gradually diminishing in length, the sixth about twice as long as broad; club tapering slightly toward apex and a little longer than the two preceding segments. Fronto-vertex a little broader than long. Abdomen triangular, shorter than thorax.

Type locality—Rio de Janeiro, Brazil.

Type—United States National Museum No. 58832.

Described from 81 ♀s and 5 ♂s, all reared from the pineapple mealybug, *Pseudococcus brevipes* (Ckll.). The holotype female and 5 ♀ paratypes are from the type locality, reared by D. T. Fullaway in January and February, 1936; 2 ♀s are from Recife, Brazil, reared by C. T. Schmidt, January 1, 1947; 10 ♀s were reared in November 1946, as progeny of stock collected at Bahia, Brazil, by W. Carter; the allotype male, 4 ♂ paratypes, and 63 ♀ paratypes were reared from *P. brevipes* collected in the field at Lahaina, Maui, Territory of Hawaii, in December 1947, by W. Carter, and are descendants of the original importations from Brazil.

Anagyrus dactylopii (Howard)

Aphycus dactylopii Howard, Proc. U. S. Nat. Mus., 21: 242, 1898.

Anagyrus dactylopii (How.) Timberlake, Univ. Calif. Pubs. Tech. Bul., 3: 224, 1924.

This species is very similar to *ananatis*, from which it can be distinguished by the first funicular segment being distinctly shorter than the pedicel and entirely black or blackish. The other joints of the funicle are also shorter than in the new species.

Anagyrus yuccae (Coquillett)

Blastothrix yuccae Coq. West American Scientist, 7: 44, 1890.

Epidinocarsis subalbicornis Girault, Psyche, 23: 44, 1916. (New synonymy.)

Anagyrus yuccae (Coq.) Timberlake, Univ. Calif. Pubs., Ent. 3: 224, 1924.

Anagyrus subalbicornis (Gir.) Timb. Univ. Calif. Pubs., Ent., 3: 224, 1924.

Anagyrus ferrisi Compere, Univ. Calif. Pubs., Ent., 4: 18, 1924. (New synonymy.)

Anagyrus subalbicornis (Gir.) Compere, Univ. Calif. Pubs., Ent., 8: 21, 1947.

I can see no differences between the types of *Blastothrix yuccae* Coq. and *Epidinocarsis subalbicornis* Gir., both of which are in the National Museum collection. Compere suppressed his *Anagyrus ferrisi* as a synonym of *subalbicornis*, but maintained *yuccae* as a good species chiefly on the basis of Coquillett's statement that there were eight long black bristles on the apex of the scutellum. I have

carefully examined Coquillett's type specimen and find only three pairs of bristles on the scutellum, exactly as in the types of *subalbicornis* and *ferrisi*.

A. yuccae is extremely close to *A. bohemani* (Westwood) as represented by a single European female specimen identified by G. Mayr. This specimen appears to be a little more uniformly black on the dorsum, and I can see only two bristles at the apex of scutellum. Otherwise I cannot distinguish it. Mayr's description of *bohemani*, however, points out so much variation that I am led to suspect that he may have included more than one species in *bohemani*, and hence, do not feel certain that this specimen is correctly identified.

Anagyrus schönherri (Westwood)

Encyrtus schönherri Westwood, Philos. Mag. (3 ser) 10: 441, 1837.

Blastothrix schönherri (Westw.) Mayr, Verhandl. Zool.-Bot. Gesell. Wien, 25: 699, 1875.

Anagyrus schönherri (Westw.) Mercet, Fauna Iberica, p. 243, 1921.

Anagyrus flavus Ishii, Bul. Imp. Agr. Expt. Sta. Japan, 3 (2): 86, 1928 (New synonymy).

I can see no differences between a specimen from Germany identified by Mayr as *Blastothrix schönherri* (Westwood) and specimens from Japan reared by C. L. Marlatt from *Pulvinaria* sp., which appear to me to agree perfectly with the description of *Anagyrus flavus* Ishii. I believe *flavus* Ishii to be a synonym of *schönherri* (Westwood).